

CLAIMS

1. A plug member for retaining grout in a substantially cylindrical bore in underground excavations, comprising a cap portion provided with means to wedge the cap portion within the bore, and at least one port disposed in the cap portion, one port
5 being arranged to receive a grout delivery means, wherein the or each port is comprised of a plurality of flexible flaps moveable between an open position and a closed position, wherein in the open position the flaps are engagable with an outer surface of the grout delivery means and in the closed position the flaps inter-engage to substantially close the or each port and substantially prevent leakage of grout through
10 the or each port.
2. The plug member according to claim 1, characterised in that the cap portion comprises a cylindrical portion provided with a lateral wall extending across a first circumferential rim of a leading end of the cylindrical portion.
3. The plug member according to claim 2, characterised in that the lateral wall is
15 curved concave or curved convex.
4. The plug member according to claim 2 or claim 3, characterised in that the means to wedge the cap portion within the bore comprises a plurality of downwardly inclined flaps depending from a second circumferential rim of an opposing end of the cylindrical portion.
- 20 5. The plug member according to any one of claims 1 to 3, characterised in that the means to wedge the cap portion within the bore comprises a plurality of flaps inclined at varying angles, a continuous resilient skirt, or a tapered bung.
6. The plug member according to claim 4, characterised in that the downwardly inclined flaps are substantially rectangularly shaped and are equidistantly and

equiangularly spaced around the second circumferential rim such that a gap between adjacent flaps is substantially triangularly shaped.

7. The plug member according to claim 6, characterised in that a thin triangularly shaped membrane extends between adjacent flaps.

5 8. The plug member according to any one of claims 4, 6 to 7, characterised in that each flap is provided with an upwardly tilted flange depending from its lowermost edge.

9. The plug member according to any one of claims 2 to 8, characterised in that any number of spaced cylindrical walls depend substantially perpendicularly from the
10 lateral wall extending across the first circumferential rim of the cylindrical portion.

10. The plug member according to claim 9, characterised in that the cylindrical walls are disposed adjacent to the first circumferential rim.

11. The plug member according to claims 9 or 10, characterised in that the cylindrical walls are interconnected by a web member.

15 12. The plug member according to any one of claims 9 to 11, characterised in that the cylindrical walls are provided with respective ribs to stabilise the cylindrical walls with respect to the cap portion.

13. The plug member according to any one of claims 9 to 11, characterised in that the cylindrical wall defines a circular portion of the lateral wall, the circular portion
20 being provided with a plurality of linear radial grooves extending from a central axis of the circular portion, thereby defining a plurality of triangular portions, whereby the grooves are adapted to be perforated or piercable such that the triangular portions form and behave in use as flexible flaps.

14. The plug member according to any one of claims 9 to 11, characterised in that the cylindrical wall defines a circular aperture in the lateral wall, the circular aperture being provided with a plurality of inwardly extending serrations.

15. The plug member according to any one of claims 2 to 14, characterised in that
5 the or each port is disposed in the lateral wall of the cap portion.

16. The plug member according to any one of claims 2 to 15, wherein the flexible flaps of the or each port are substantially equal sized triangular portions spaced equiangularly within a circular indentation in the cap portion.